UREA CONSUMED BY CATTLE ON FEED, FEEDING YEAR 1965-66

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PREFACE

This report was prepared in the Production Resources Branch, Farm Production Economics Division, Economic Research Service, as part of a continuing study of emerging technologies in the livestock-feed industry.

Earl F. Hodges initiated this study and aided its overall planning. Emmett B. Hannawald and Robert P. Christeson, Statistical Reporting Service, assisted in the preparation of the schedule and supplied background information. Oakley M. Ray, Vice President, American Feed Manufacturers Association, supplied guideline statistics used in the study.

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HIGHLIGHTS

Cattle on feed consumed about 327 million pounds (163,500 tons) of urea during the feeding year beginning October 1, 1965. On April 1, 1966, urea was fed in 31 percent of all operating feedlots, and 58 percent of the cattle on feed were fed urea. These percentages include three-fourths of all feedlots with more than 300 head on feed.

Mixed feeds accounted for about 80 percent of the urea fed while 20 percent was purchased as a separate ingredient. Separate ingredient purchases usually were mixed with concentrates, either by the cattle feeder or to his order. Only small quantities of urea were mixed with silage.

Three nitrogen percentage grades of urea were purchased as a separate ingredient. In the first 3 months of 1966, a little more than half was 45 percent nitrogen, a third was 42 percent, and the rest was 46 percent.

More than half of the feedlot operators who purchased urea as a separate ingredient mixed it on their farms using their own equipment; local feed dealers were the major mixers for small feedlots. Only in the Northeast did feeders commonly employ mobile custom mills.

The local feed or farm supply store was the principal supply source for urea purchased as a separate ingredient. However, urea manufacturers were the primary source for feedlots with more than 1,000 head on feed.

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UREA CONSUMED BY CATTLE AND CALVES ON FEED
Feeding Year 1965-66

By

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INTRODUCTION

Commercial urea is a synthetic nitrogen compound used to replace part of the protein in the ration for cattle, sheep, and other ruminants. A ruminant cannot utilize urea directly, but microorganisms in the rumen convert urea to protein which can be digested. These microorganisms also need carbohydrates to feed on. It is advantageous to use commercial urea because the combined cost of urea and the requisite carbohydrates is usually much less than the cost of oilseed meals or other common sources of equivalent protein.

This report presents the results of a national survey on urea used by cattle and calves on feed. It provides answers to such questions as how much urea is being consumed by cattle on feed, in what forms it is being fed, what percentages of feedlots and cattle on feed are being supplied with it, what are the most common sources of supply, and what regional and size group differences may be present.

For several reasons, available estimates of the quantities of urea in livestock feed have been incomplete up to this time. First, urea is used for fertilizer and other commercial purposes as well as for livestock feed. Technical problems formerly restricted livestock consumption to so-called feed-grade urea. But these problems have been largely solved and most grades of urea are now fed extensively. Because of this interchangeability, the quantities of urea going into feed and other uses have not been separately identified in distribution channels. Thus, the commonly quoted estimates of feed-grade urea represent only a part of the urea actually fed to livestock.

METHODOLOGY

The findings in this report are based on a mail survey of more than 6,000 cattle feeders in the 32 major cattle feeding States. Data were obtained from about 6 percent of the feedlots and on 20 percent of the cattle on feed April 1, 1966. The sample was not equally representative of all size groups and expansion to the whole population required weighting for variations in this representation. Expansion factors were therefore developed for both feedlot numbers and cattle numbers. The

two sets were needed because some questions were related to feedlot numbers and some to cattle numbers. Most of the survey questions were for an April 1, 1966, situation and the estimates are therefore connected primarily with that date. Details of the expansion factors are explained in the Appendix.

Cattle feeders were not asked directly how much urea they gave their beef cattle. Often a feeder may not know the urea content of the commercial formula feed that he is using. Accordingly, they were asked several related questions which were used to construct a reasonable estimate of the total use of urea.

The first question was, "Did any of the feed that you fed yesterday to cattle and calves on feed include urea?" From this it was established that 58 percent of the cattle in feedlots in the 32 major cattle feeding States on April 1, 1966, were in feedlots in which urea was fed.

The other questions obtained information about the different ways in which urea was fed and made possible the construction of estimates of urea used in each way by regions and size groups. These estimates were then combined to make a total estimate of the urea fed to cattle and calves on feed.

Urea is fed in three principal ways: (1) in commercial mixed feed, 1/ (2) purchased as a separate ingredient to be mixed in a concentrate ration either by the cattle feeder or custom mixed to his order, and (3) purchased separately and mixed in silage.

Specific questions concerning the quantities of urea purchased in the preceding 3 months as a separate ingredient allowed fairly direct estimates of this portion to be made. The urea fed in commercial mixed feed was more difficult to estimate. The survey gave information on the number of feedlots and the number of cattle in feedlots in which commercial mixed feed containing urea was fed. Estimates of urea consumption in these feedlots were made by assuming an average urea feeding rate per head derived from rates at which urea purchased separately was fed.

ANNUAL CONSUMPTION OF UREA

Estimates for the feeding year beginning October 1, 1965, indicate that about 327 million pounds (163,500 tons) of urea were consumed by cattle on feed in the United States (table 1). 2/ This estimate was derived from survey data focusing mainly on April 1, 1966, and the preceding 3 months. The annual estimate assumes that feeding rates per head for the year would be close to those reported in the survey. The data reflect the regions of heaviest use and show the distribution between urea purchased in commercial mixed feed and purchased as a separate ingredient. As indicated in the tables, urea use is widespread and corresponds in general with the geographic distribution of cattle feeding operations.

1/ The term "commercial mixed feed" was used on the survey schedule and is equivalent to "commercial formula feed."

2/ The tables referred to are grouped immediately after the text. Most of them show either regional or size group distributions. The totals are for the 32 major cattle feeding States. States included in each region are shown in figure 1.

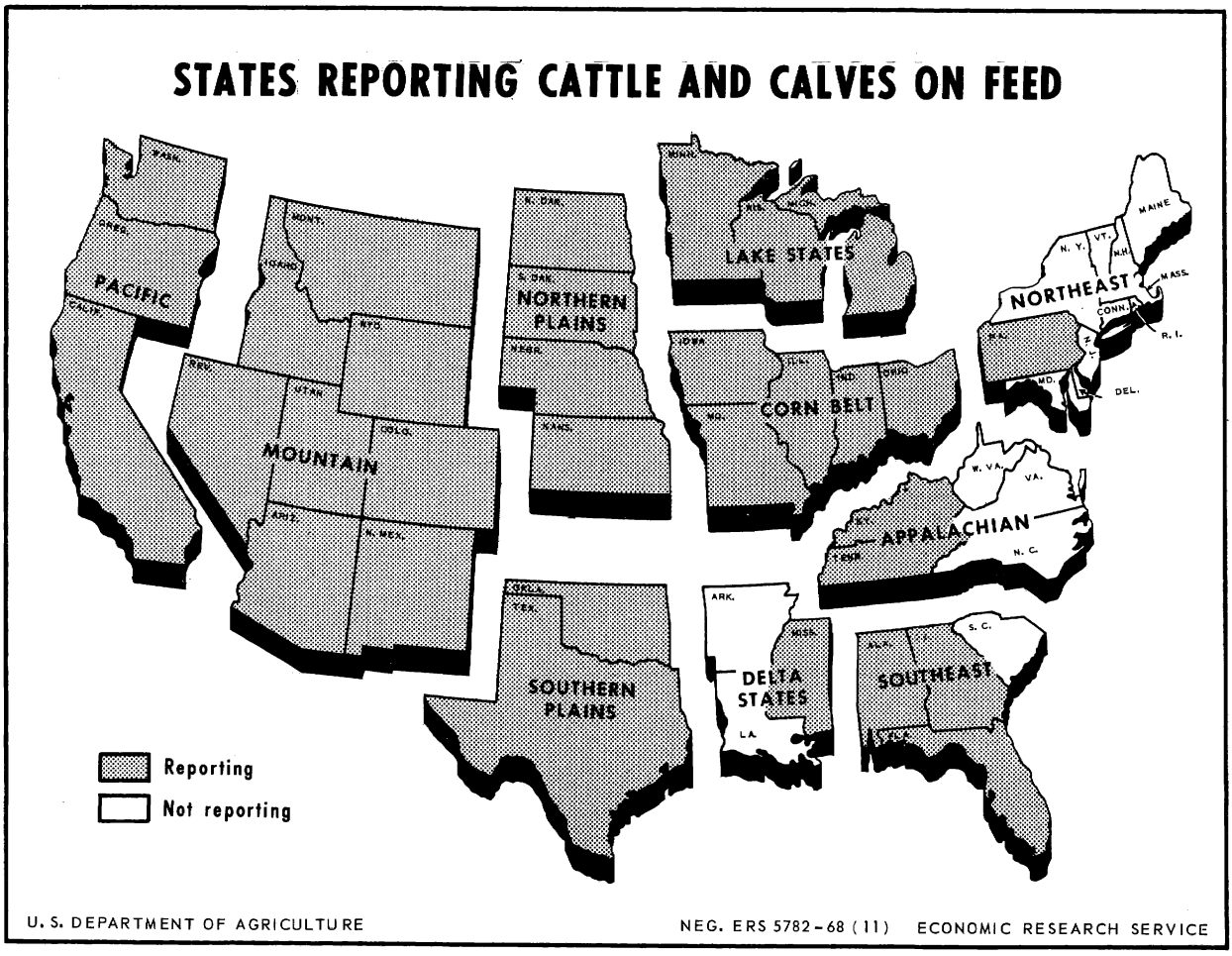

Figure 1

THE EXTENT OF UREA CONSUMPTION

About 31 percent of all operating feedlots fed urea to about 58 percent of the cattle on feed April 1, 1966. The geographic distribution is more uniform than the distribution by size groups as measured by number on feed (tables 1, 2, and 3). The extent of the quantity of urea fed was greater in the medium-to-large feedlots than in the small ones. Three-fourths of the feedlots with more than 300 head of cattle fed urea. And in feedlots with more than 5,000 head, 83 percent of the cattle on feed received urea. Operation size influenced the regional distribution of urea consumption for the major feeding regions.

THE CONCENTRATION OF FEEDLOTS AND CATTLE ON FEED

Feedlots are concentrated in the Corn Belt, Northern Plains, and Lake States. Cattle on feed are most numerous in the Corn Belt, Northern Plains, Mountain, and Pacific regions. Cattle in feedlots receiving urea are also most commonly found in the Corn Belt, Northern Plains, Mountain, and Pacific regions (table 4).

Classified by number of cattle on feed, feedlots are most numerous in the 1 to 300 head classes, while cattle and calves are most frequently found in the less than 300 and the over 1,000 head classes (table 4). Again the distribution for those receiving urea are similar.

FORMS IN WHICH UREA IS FED

About 80 percent of the urea purchased for cattle on feed was included in commercial mixed feed, while most of the remainder was mixed in concentrates either by the feeder or to his order. Quantities purchased as a separate ingredient were especially significant in the size groups with more than 1,000 head on feed (table 5).

When urea was first used in commercial formula feeds, a distinct grade, 42 percent nitrogen, was considered the "feed grade." The 46 percent nitrogen level was considered suitable for fertilizer and industrial uses but not for feed because of caking. With laminated moisture barrier bags, caking became less of a problem. The 42 percent nitrogen urea is a clay coated prill, or particle, that can be poured, even after exposure to moist air. Only this added conditioner determines the grade difference. In 1964, a major urea producer offered a second feed grade, urea-45, which reduced the conditioner content with a corresponding increase in nitrogen content. Survey findings confirm that all three nitrogen-urea levels were being fed. Of the 12.5 million pounds of urea purchased separately during the first 3 months of 1966, 14 percent was 46 percent nitrogen urea, 53 percent was 45 percent nitrogen urea, and 33 percent was the original 42 percent feed grade urea (table 6). Thus, about three times as much urea was being used as a separate ingredient as might be supposed from information about so-called feed-grade (42 percent) urea.

Quantities of urea used in silage were not obtained directly in this study as feeders were asked only whether they fed it in silage or in concentrates, and some did both. It is evident, however, that the use in silage, at least on April 1, was relatively small, compared with the use in concentrates (tables 7 and 8).

MIXING UREA PURCHASED AS A SEPARATE INGREDIENT

Feedlot operators were asked where they mixed the urea that was purchased as a separate ingredient and added to a concentrate ration. More than half of them mixed the urea on the farm with their own equipment (table 9). Local feed dealers were the major mixers for small feedlot operators, accounting for about a third of the total number of feedlots mixing their separately purchased ingredients. Mobile custom mills made up about 11 percent of the number.

On a regional basis, the feedlot owner's equipment was the most commonly used in every region except the Northeast and the Lake States. In the Northeast, the mobile custom mill was most frequent, and in the Lake States, the local feed dealer's mill was the leading mixing method (table 9).

SOURCES OF UREA PURCHASED AS A SEPARATE INGREDIENT

More than 60 percent of the feedlots purchasing urea as a separate ingredient did so from the local feed or farm supply store, while 32 percent of the feedlots purchased urea from either a regional feed manufacturer or a feed sales representative who shipped directly to the buyer. A small number were supplied by urea or fertilizer manufacturers (table 10). Urea manufacturers, although supplying the smallest number of feedlots, were the main source for feedlots with more than 1,000 head.

REGIONAL AND SIZE DIFFERENCES

The Corn Belt, Northern Plains, Mountain, and Pacific States represent the greatest centers of cattle feeding and, consequently, of urea use.

The use of urea in cattle feedlots differs less regionally than by size of operation (table 4). The larger operations tend to purchase more urea as a separate ingredient to mix in concentrates. Because of the date of the survey, annual purchases for mixing urea in silage may not have been fully reflected in the data.

APPENDIX

Methods of Expanding Sample Data

The known data for April 1, 1966, included the Statistical Reporting Service State totals for cattle and calves on feed, and the average number of cattle and calves on feed in each size class from the urea survey. In addition, SRS data were published on the number of feedlots used in the preceding year for each State. Also, some partial distributions of numbers of cattle on feed by States were obtained from unpublished SRS sources. From these results, April 1 distributions for feedlot numbers and cattle numbers by size classes were derived for each State.

The procedure was as follows:

(1) Preliminary distributions of numbers of feedlots and numbers of cattle on feed for each State were developed from unpublished SRS data. Many of these were adjusted to fit the size class intervals used in this study.

(2) Preliminary percentage distributions of feedlot numbers were applied to published feedlot numbers of the preceding year as a first approximation of total April 1 feedlot numbers (recognizing that many were not operating on that date).

(3) Next, the total number of feedlots so derived was multiplied by the average number of cattle per feedlot in each size class from the survey. This projected the total number of cattle on feed April 1, assuming that all feedlots had been occupied and operating at the same levels of occupancy as those that were operating.

(4) The percentage distributions resulting from (3) were then applied to the April 1 number of cattle on feed as shown by the SRS quarterly survey. The resulting cattle numbers were divided by average numbers per feedlot in each size class from the survey to provide an approximate distribution of feedlot numbers for April 1.

(5) This approximate distribution of feedlot numbers, however, did not allow for differences in degrees of occupancy at different size levels and a further correction was made for this factor. Unpublished data for 16 of the 32 major cattle feeding States supplied the number of

feedlots on April 1 in the group having a capacity of 1,000 head or more. From this and other information, it was possible to adjust feedlot numbers in the two top classes, making corresponding adjustments to allow for lower percentages of capacity use in the lower size classes.

(6) Less complete information for the 16 remaining States was used in the same general way to adjust distributions of feedlot numbers and capacities for the various size classes. In all cases the average number of head per feedlot was held at the figure shown by the urea survey.

(7) This general process created a set of feedlot numbers and a set of cattle numbers on feed which could be used for calculating expansion factors for each size class in each State. These factors were obtained by simply dividing the numbers of operating feedlots on April 1 in each size class and the numbers of cattle and calves on feed by the corresponding numbers in the urea survey sample.

Table 1.--Urea fed to cattle and calves on feed, by region, Oct. 1, 1965 to Sept. 30, 1966 1/

Production region	Quantities fed--					
	In commercial mixed feed		As a separate ingredient		Total urea fed	
	Million pounds	Percent	Million pounds	Percent	Million pounds	Percent
Northeast 2/	1.6	1	0.5	1	2.1	1
Lake States	16.8	6	2.3	4	19.1	6
Corn Belt	88.3	34	10.0	16	98.3	30
Northern Plains	56.7	22	5.2	8	61.9	19
Appalachian	2.9	1	2.1	3	5.0	2
Southeast	3.8	1	3.1	5	6.9	2
Delta States 2/	.6	3/	.3	3/	.9	3/
Southern Plains	23.0	9	5.7	9	28.7	9
Mountain	37.5	14	17.4	28	54.9	16
Pacific	32.6	12	16.8	26	49.4	15
32-State total	263.8	100	63.4	100	327.2	100

1/ Estimates for the full feeding year were expanded from those for the 3 months--January-March 1966--by assuming that rates of feeding urea per head for the other 9 months would be the same. The average number of cattle on feed was assumed to be the number shown by the Statistical Reporting Service for each quarter.

2/ Northeast and Delta States regions are each represented by a single State (fig. 1).

3/ Less than 0.5 percent.

Table 2.--Total operating feedlots and feedlots feeding urea, by region and feedlot size group, Apr. 1, 1966

Region and feedlot size group	Feedlots with cattle and calves on feed 1/	Feedlots feeding urea	
		Actual	Percentage of operating feedlots
	Number	Number	Percent
Production region:			
Northeast	2,005	903	45
Lake States	18,154	4,437	24
Corn Belt	59,196	18,377	31
Northern Plains	24,086	8,379	35
Appalachian	669	328	49
Southeast	623	285	46
Delta States	160	49	31
Southern Plains	1,082	425	39
Mountain	2,613	675	26
Pacific	850	387	45
32-State total	109,438	34,245	31
Cattle in feedlot: 2/			
1 to 50	73,704	15,974	22
51 to 150	23,131	10,555	46
151 to 300	8,930	4,973	56
301 to 500	1,927	1,521	79
501 to 1,000	1,032	733	71
1,001 to 5,000	548	360	66
5,001 and over	166	129	78
32-State total	109,438	34,245	31

1/ The total number of feedlots shown on this and other tables is an estimate of the feedlots in active operation on Apr. 1, 1966. It does not include feedlots not in use on that date. The basis of the estimate is explained in the appendix.

2/ Number on feed Apr. 1, not a measure of feedlot capacity.

Table 3.--Total cattle and calves on feed, and those fed urea, by region and feedlot size group, Apr. 1, 1966

Region and feedlot size group	Total cattle and calves on feed	Cattle and calves in feedlots feeding urea	
		Number	Percentage of all on feed
	1,000 head	1,000 head	Percent
Production region:			
Northeast	77	50	65
Lake States	815	365	45
Corn Belt	3,918	2,048	52
Northern Plains	2,114	1,157	55
Appalachian	91	70	77
Southeast	142	103	73
Delta States	12	5	42
Southern Plains	662	499	75
Mountain	1,359	888	65
Pacific	1,037	731	70
32-State total	10,227	5,916	58
Cattle in feedlot: 1/			
1 to 50	1,692	491	29
51 to 150	2,146	1,008	47
151 to 300	1,919	1,098	57
301 to 500	770	464	60
501 to 1,000	709	499	70
1,001 to 5,000	1,149	820	71
5,001 and over	1,842	1,536	83
32-State total	10,227	5,916	58

1/ Number on feed Apr. 1, not a measure of feedlot capacity.

Table 4.--Percentages of feedlots and of cattle and calves fed urea, by region and feedlot size group, Apr. 1, 1966

Region and feedlot size group	Feedlots	Feedlots feeding urea	Cattle and calves on feed	Cattle and calves in feedlots feeding urea
	Percent	Percent	Percent	Percent
Production region:				
Northeast	1.8	2.6	0.7	0.8
Lake States	16.6	13.0	8.0	6.2
Corn Belt	54.1	53.7	38.3	34.6
Northern Plains	22.0	24.5	20.7	19.6
Appalachian	.6	1.0	.9	1.2
Southeast	.6	.8	1.4	1.7
Delta States	.1	.1	.1	.1
Southern Plains	1.0	1.2	6.5	8.4
Mountain	2.4	2.0	13.3	15.0
Pacific	.8	1.1	10.1	12.4
32-State total	100.0	100.0	100.0	100.0
Cattle in feedlot: 1/				
1 to 50	67.3	46.6	16.6	8.3
51 to 150	21.1	30.8	21.0	17.0
151 to 300	8.2	14.5	18.8	18.6
301 to 500	1.8	4.4	7.5	7.8
501 to 1,000	.9	2.2	6.9	8.4
1,001 to 5,000	.5	1.1	11.2	13.9
5,001 and over	.2	.4	18.0	26.0
32-State total	100.0	100.0	100.0	100.0

1/ Number on feed Apr. 1, not a measure of feedlot capacity.

Table 5.--Urea for cattle and calves on feed, purchased in commercial mixed feed or as a separate ingredient, by region and feedlot size group, January-March 1966

Region and feedlot size group	Urea purchased for cattle and calves on feed							
	In commercial mixed feed		As a separate ingredient by--1/				Total	
			Those who fed urea Mar. 31, 1966		Those who did not feed urea Mar. 31, 1966			
	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent
Production region:								
Northeast	593	89	42	6	33	5	668	100
Lake States	4,303	92	386	8	13	---	4,702	100
Corn Belt	24,141	91	1,764	7	625	2	26,530	100
Northern Plains	13,643	80	1,709	10	1,695	10	17,047	100
Appalachian	827	96	28	3	11	1	866	100
Southeast	1,210	41	1,299	43	471	16	2,980	100
Delta States	62	100	---	---	---	---	62	100
Southern Plains	5,887	84	1,144	16	5	2/	7,036	100
Mountain	10,466	80	2,466	19	197	1	13,129	100
Pacific	8,623	69	3,638	29	290	2	12,551	100
32-State total	69,755	81	12,476	15	3,340	4	85,571	100
Cattle in feedlot: 3/								
1 to 50	5,785	88	695	11	58	1	6,538	100
51 to 150	11,890	90	559	4	794	6	13,243	100
151 to 300	12,950	84	993	6	1,505	10	15,448	100
301 to 500	5,466	93	326	6	84	1	5,876	100
501 to 1,000	5,885	89	536	8	209	3	6,630	100
1,001 to 5,000	9,665	76	2,762	22	315	2	12,742	100
5,001 and over	18,114	72	6,605	26	375	2	25,094	100
32-State total	69,755	81	12,476	15	3,340	4	85,571	100

1/ Estimates of urea purchased as a separate ingredient were obtained in answers to two separate questions, one addressed to those who were currently feeding urea and the other to those who were not, but had fed it earlier in the period.

2/ Less than 0.5 percent.

3/ Number on feed Apr. 1, not a measure of feedlot capacity.

Table 6.--Urea (by nitrogen percentage) purchased as a separate feed ingredient, by region and feedlot size group, January-March 1966

Region and feedlot size group	Urea purchased as a separate ingredient			
	Total	As a percentage of total purchases		
		42 percent nitrogen	45 percent nitrogen	46 percent nitrogen
	1,000 pounds	Percent	Percent	Percent
Production region:				
Northeast	42	16	84	---
Lake States	386	17	82	1
Corn Belt	1,764	46	39	15
Northern Plains	1,709	21	76	3
Appalachian	28	60	39	1
Southeast	1,299	5	90	5
Delta States	---	---	---	---
Southern Plains	1,144	73	27	---
Mountain	2,466	1	99	---
Pacific	3,638	52	10	38
32-State total	12,476	33	53	14
Cattle in feedlot: 1/				
1 to 50	695	19	39	42
51 to 150	559	21	75	4
151 to 300	993	3	93	4
301 to 500	326	6	57	37
501 to 1,000	536	66	28	6
1,001 to 5,000	2,762	29	64	7
5,001 and over	6,605	39	44	17
32-State total	12,476	33	53	14

1/ Number on feed Apr. 1, not a measure of feedlot capacity.

Table 7.--Feedlots in which urea was purchased in commercial mixed feed or as a separate ingredient, by region and feedlot size group, Apr. 1, 1966

Region and feedlot size group	Feedlots in which urea was purchased--							
	In commercial mixed feed		As a separate ingredient and fed--				Total 1/	
			In concentrates		In silage			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Production region:								
Northeast	903	100	191	21	12	1	903	100
Lake States	4,395	99	363	8	171	4	4,437	100
Corn Belt	18,249	99	873	5	672	4	18,377	100
Northern Plains	8,376	100	236	3	165	2	8,379	100
Appalachian	328	100	92	28	90	27	328	100
Southeast	234	82	67	24	12	4	285	100
Delta States	38	78	---	---	18	37	49	100
Southern Plains	410	96	51	12	6	1	425	100
Mountain	640	95	59	9	40	6	675	100
Pacific	377	97	79	20	5	1	387	100
32-State total	33,950	99	2,011	6	1,191	3	34,245	100
Cattle in feedlots: 2/								
1 to 50	15,866	99	763	5	315	2	15,974	100
51 to 150	10,471	99	675	6	421	4	10,555	100
151 to 300	4,930	99	334	7	350	7	4,973	100
301 to 500	1,509	99	99	7	48	3	1,521	100
501 to 1,000	728	99	74	10	33	5	733	100
1,001 to 5,000	331	92	44	12	17	5	360	100
5,001 and over	115	89	22	17	7	5	129	100
32-State total	33,950	99	2,011	6	1,191	3	34,245	100

1/ Feedlots feeding urea in different ways add to more than the totals because some feedlots fed urea in more than one way.

2/ Number on feed Apr. 1, not a measure of feedlot capacity.

Table 8.--Cattle and calves in feedlots in which urea was purchased in commercial mixed feed, or as a separate ingredient, by region and feedlot size group, Apr. 1, 1966

Region and feedlot size group	Cattle and calves in feedlots in which urea was purchased			
	In all forms 1/	In commercial mixed feed	As a separate ingredient and fed	
			In concentrates	In silage
	1,000 head	Percent	Percent	Percent
Production region:				
Northeast	50	100	14	2
Lake States	365	100	7	5
Corn Belt	2,048	99	4	5
Northern Plains	1,157	100	4	3
Appalachian	70	100	27	26
Southeast	103	73	46	3
Delta States	5	88	---	57
Southern Plains	499	99	19	---
Mountain	888	81	21	4
Pacific	731	78	31	---
32-State total	5,916	94	13	4
Cattle in feedlot: 2/				
1 to 50	491	99	3	2
51 to 150	1,008	99	6	4
151 to 300	1,098	99	7	7
301 to 500	464	98	5	5
501 to 1,000	499	99	7	4
1,001 to 5,000	820	97	12	---
5,001 and over	1,536	79	29	1
32-State total	5,916	94	13	4

1/ Percentages add to more than 100 because some feedlots fed urea in more than one way.

2/ Number on feed Apr. 1, not a measure of feedlot capacity.

Table 9.--Feedlots purchasing urea as a separate ingredient, by method of mixing in the concentrate ration, by region and feedlot size group, January-March 1966

Region and feedlot size group	Method of mixing							
	At local feed dealer's mill		At farm by mobile custom mill		At farm with own equipment		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Production region:								
Northeast	67	33	83	40	55	27	205	100
Lake States	185	54	59	18	96	28	340	100
Corn Belt	195	28	24	4	476	68	695	100
Northern Plains	139	45	---	---	173	55	312	100
Appalachian	6	6	1	1	86	93	93	100
Southeast	10	17	---	---	48	83	58	100
Delta States	---	---	---	---	---	---	---	---
Southern Plains	11	22	---	---	38	78	49	100
Mountain	12	29	3	7	26	64	41	100
Pacific	26	24	33	31	48	45	107	100
32-State total	651	34	203	11	1,046	55	1/1,900	100
Cattle in feedlots: 2/								
1 to 50	316	46	131	19	245	35	692	100
51 to 150	167	28	33	6	385	66	585	100
151 to 300	65	20	3	1	256	79	324	100
301 to 500	97	56	3	2	73	42	173	100
501 to 1,000	3	4	33	48	33	48	69	100
1,001 to 5,000	---	---	---	---	36	100	36	100
5,001 and over	3	14	---	---	18	86	21	100
32-State total	651	34	203	11	1,046	55	1/1,900	100

1/ This total is lower than totals in earlier tables because some replies did not indicate the type of supplier.
2/ Number on feed Apr. 1, not a measure of feedlot capacity.

Table 10.--Feedlots purchasing urea as a separate ingredient, by type of supplier, by region and feedlot size group, January-March 1966

Region and feedlot size group	Urea purchased from--										Total	
	Local feed or farm supply stores		Regional feed manufacturer		Feed sales representative direct shipment		Fertilizer sales representative direct shipment		Direct from urea manufacturer			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Production region:												
Northeast	148	92	12	8	---	---	---	---	---	---	160	100
Lake States	297	93	13	4	1	---	8	3	---	---	319	100
Corn Belt	395	50	171	22	190	24	26	3	9	1	791	100
Northern Plains	94	50	42	22	43	23	3	2	5	3	187	100
Appalachian	87	86	7	7	7	7	---	---	---	---	101	100
Southeast	33	26	25	20	25	20	15	12	28	22	126	100
Delta States	---	---	---	---	---	---	---	---	---	---	---	100
Southern Plains	24	67	1	3	6	16	2	6	3	8	36	100
Mountain	44	77	---	---	---	---	8	14	5	9	57	100
Pacific	21	26	20	25	21	26	9	11	9	11	80	100
32-State total	1,143	61	291	16	293	16	71	4	59	3	1/1,857	100
Cattle in feedlots: 2/												
1 to 50	462	65	123	17	117	17	2	3/	4	1	708	100
51 to 150	384	83	19	4	19	4	21	5	17	4	460	100
151 to 300	197	39	134	26	135	26	39	8	3	1	508	100
301 to 500	64	75	5	6	7	8	---	---	9	11	85	100
501 to 1,000	33	62	7	13	7	13	5	10	1	2	53	100
1,001 to 5,000	3	12	2	15	4	8	4	15	13	50	26	100
5,001 and over	---	---	1	6	4	24	---	---	12	70	17	100
32-State total	1,143	61	291	16	293	16	71	4	59	3	1/1,857	100

1/ This total is lower than totals in earlier tables because some replies did not indicate the type of supplier.
2/ Number on feed Apr. 1, not a measure of feedlot capacity.
3/ Less than 0.5 percent.

* U. S. GOVERNMENT PRINTING OFFICE: 1969--343-493/ers-45